

Banana

**INDUSTRY ADVISORY COMMITTEE
ANNUAL REPORT 2013/14**



Horticulture Australia

OVERVIEW

Latest estimates indicate Australia's banana industry achieved its largest annual production total in the 2013/14 financial year.

Strong volumes this year saw the total crop production for the 2013/14 financial year close at 28.6 million cartons (372,251t). This is up eight percent from 2012/13, which closed at 26.3 million cartons (341,900t).

The record production resulted in a corresponding increase in revenues generated for research and development (R&D) and marketing through the Banana industry's National R&D and Marketing levy. The levy was expected to raise \$6.3 million from growers.

Importantly, the larger production volumes were successfully managed through the supply chain and wholesale returns to banana growers generally held firm. Growers, however, remained concerned about continuing farm sustainability at the levels of return experienced in recent years.

It was also a busy year for the industry in terms of developing a new *Banana Strategic Investment Plan 2014–19*. Industry consultation meetings were held in Innisfail, Qld, and Yamba, NSW. These meetings and numerous phone and face-to-face interviews ensured industry priorities were captured.

An outbreak of Banana Freckle (*Phyllosticta cavendishii*) announced in August 2013 was the first major outbreak of the disease on Cavendish bananas in Australia. It required the banana industry's first use of the Emergency Plant Pest Response Deed.

Research was finalised confirming the Australian banana industry has fully recovered its ground as a major generator of economic activity following Cyclone Yasi's destruction of about 80 percent of production from February 2011 to December 2011. The research, based on 2010/11, indicated the industry contributes \$1.1 billion annually to the economy and generated almost 10,000 jobs, directly and indirectly, and will be useful in benchmarking future trends. Gross Value of Production (GVP) was estimated at \$550 to \$580 million.

Levy investment

In 2013/14, the total income received was \$8,741,243 of which the Australian Government provided \$2,317,353 of matched funding to support 32 projects in the research and development (R&D) levy program.

The current levy is 1.7 cents per kilogram. A total of \$4,746,426 was invested into R&D projects and \$4,083,149 towards marketing projects.

In addition to levy funds, \$356,560 of voluntary contributions (VC) were raised for supplementing levy-funded projects and solely funding VC-only funded projects. VC funds were matched by the Australian Government for all R&D activity.

HAL is responsible for managing these funds and takes advice on how to invest the funds from the Banana Industry Advisory Committee (IAC). Consultation with the IAC is essential in determining the most critical investment priorities for the industry. Priorities set by the IAC include:

- Plant protection: developing resistant varieties and reducing risk from incursions of emergency and endemic plant pests.
- Safe access to banana germplasm and facilitating safe access to new varieties.
- Sustainable management options for priority pests and diseases.
- Building industry capacity through facilitating R&D project development, extension and communications.

In 2013/14, Australian Banana Growers' Council acted as the service provider on eight projects.

The industry also contributes 2.25 percent of levy and voluntary contributions (matched to 4.5 percent by the Australian Government) to an across industry and transformational investment program that addresses issues that affect all of horticulture, such as water availability, climate change, biosecurity and market access.

Strategic objectives

The process for determining the industry's priorities began with the development of the *Banana Strategic Investment Plan 2012–14* (SIP), which guides R&D and marketing investment.

The plan was developed to reflect the industry's priorities and the Australian Government's rural R&D priorities and is reviewed regularly. The industry's objectives, as outlined in the strategic plan are:

1. Increase consumer demand of Australian bananas by 15 percent by 2014 through marketing and promotion.
2. Increase production efficiency by



The projects in this report have been funded by Horticulture Australia Limited (HAL) using the banana industry levy and/or voluntary contributions from industry with matched funding from the Australian Government for all research and development (R&D) activity.

five percent by 2014 with minimal to no environmental impact.

3. Ensure a positive return on investment of industry levies by enhancing the industry's leadership, capacity and influence.

All projects in the R&D and marketing programs address one of these objectives.

R&D program

Highlights of the R&D program included:

- Development of a new *Banana Industry Strategic Investment Plan 2014-19*
- Screening for resistance to panama wilt and Tropical Race 4 began at the Coastal Plains Banana Quarantine Station (CPBQS), NT. Testing the tissue culture process to eliminate it as a potential avenue of spread of the various strains of *Fusarium oxysporum f. sp. cubense* (Foc) into new locations also began.
- A newly accredited post-entry quarantine laboratory.
- Continued progress in the control and eradication of Banana Bunchy Top Virus in Far North NSW.

- Successful trialing of an industry data and information system with a grower pilot group in Far North Qld.

- Development of innovative methods for the communication of R&D project outcomes within the *National banana development and extension project*.

The R&D program consisted of 34 projects. Of these, two projects were funded solely by Voluntary Contributions (VC) and two projects were both levy and VC-funded.

Marketing program

The overarching communication objective for the 2013/14 marketing strategy was to increase banana purchase and usage occasions amongst 18 to 39 year-olds by demonstrating the benefits of long lasting energy. To build consideration for bananas as an everyday snack and increase frequency of purchase, the aim is to remind consumers of its benefits at key snacking moments throughout their day. The business objective is to make bananas the number one snack food in Australia by 2015.

The media channel mix remains consistent with the previous year. Channels have a dual role of brand education around long-lasting energy and a time targeted approach to reach our target audience during key snacking occasions. The multimedia strategy that includes TV, online, social, out-of-home and radio advertising combined with PR, experiential, sponsorship and retail partnerships to drive consumption.

Conclusion

This report provides a snapshot of project activities in the 2013/14 year. The report's sections are divided by the industry's objectives to reflect the R&D and marketing activities being undertaken that address these industry issues.

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OBJECTIVE 1

Increase consumer demand of Australian bananas by 15 percent by 2014 through marketing and promotion

Carton scoping study

Average waste across Australian retailers is approximately five to eight percent of total volume sold, at a retail value between \$51.7 million and \$82.7 million per year. This is significantly higher than other international markets such as the UK and USA where waste is closer to two percent of sales.

The objective of this scoping study was to assess the current banana carton with a view to identifying solutions to improve the quality of fruit that arrives at retail stores, reducing waste and ultimately increasing sales.

The recommendations from this project are to facilitate change through three stages:

Stage 1: Minimum specifications

In the first instance, introduce a minimum packing and packaging specification for the one-piece and two-piece cartons to ensure all growers are aware of the need to use the appropriate type, quantity and combination of packaging and create awareness about the benefits of doing so. This will enable change to occur immediately and with minimal cost.

Stage 2: Best practice guidelines

The second stage should be to develop optimum best-practice packing guidelines for all the packing configurations currently

in use, namely the one-piece and two-piece cartons, RPC containers and 13kg and 15kg pack weights, for each key stage of the banana supply chain. Including all packaging combinations will allow growers to pack any pack configuration in line with requests from their retailer customers.

Stage 3: Step-change packing processes and packaging

Finally, a project could be conducted which focuses upon cherry picking the best aspects of all practices and packaging types both domestically and internationally, and then conducting trials to quantify the benefit and fully understand the costs. This would include both one-piece and two-piece cartons as well as RPCs. The aim would be to create a step-change in fruit quality.

Stages one and two will rely on thorough engagement and communication to growers to ensure unbiased and accurate information is relayed to growers to enable them to make an informed decision that will address their specific business needs. This can be supported through the *National banana development and extension project* (BA13004).

If the recommendations in this report are actioned, it will provide an immediate

improvement in fruit quality and a pathway forward to achieve a further step-change across the whole industry, which will ultimately lead to an increase in consumer demand for bananas.

Project BA13015

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New production and marketing information system

NatureLab, Agtrix and TRAP Services together create a database that could be used to monitor and forecast production and hold industry information.

To develop the system, a study was undertaken over five months involving a focus group with eight growers (21 farms), field staff responsible for biosecurity and other industry and market representatives.

Farms managed by the focus group were mapped by the study team using AgDat to demonstrate how the system could provide the base production data needed for long-term production trends, as well as providing growers with the opportunity to record data about their farming operations through an interactive web mapping

interface. The types of data collated included bell injection and bagging numbers, chemical and fertiliser applications, and activities such as desuckering, deleafing, irrigation and nurse suckering.

The industry recognised that up-to-date mapping of production areas could play a key role in identifying longer-term trends in production and would also prove to be a valuable asset in any response that the industry takes in biosecurity threats or natural disasters. While the industry could take control of maintaining mapping data to monitor long-term trends in production, the growers were also provided with a system to record activities on their farm through a map interface.

The system is secure and certain business information is only accessible by the individual grower. Less sensitive data from each participant can be amalgamated for industry use, such as to assist in responding to a crisis.

Project BA12016

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Understanding purchase behaviour

Reliable information on consumer purchase patterns help the banana industry to gain a better understanding of shopping behaviour and allows for better promotion planning throughout the year.

Nielsen's Homescan Consumer Panel was designed to monitor and understand household purchasing of packaged groceries and fresh produce. With 10,000 demographically-representative households, the Australian panel is now the second largest panel per capita in the world, providing household-level data on a continuous basis.

This vital market information is being used to track performance and demographic consumption, and to help define strategies to improve the industry's sales performance.

To date in 2013/14, 93 percent of Australian households purchased bananas at least once. The average Australian household spent about \$59 on bananas across 22 occasions in the year. Of the households that bought bananas, 62 percent of expenditure came from

households that do not have children under 18 years old.

Despite representing a lower proportion of total banana sales, families with children spend \$71 per household on bananas across the year, \$25 more than singles and couples, with the exception of senior couples whose behaviour is closer to families. Seniors represent 18 percent of banana buyers but account for 22 percent of spend on bananas. Conversely, independent singles represent 20 percent of banana buyers but only 15.5 percent of spend.

Project MT12010

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Subtropical industry market development

Following on from the development of a three-year strategic plan for subtropical banana industry market development in 2011, two specific projects aimed to implement initiatives identified in the plan. The first project created an online supply chain directory specifically to provide a central point for developing supply and demand alliances. The directory is now available on the Australian Banana Growers' Council website at www.abgc.org.au/banana-industry/links.

The second project addressed capacity building around grower needs in market development. Workshops were conducted across the region, designed to engage growers and wholesalers with other industry affiliates, and to determine priorities and actionable plans for future market development.

A small but enthusiastic band of growers and wholesalers emerged, and supply chain networks were identified and developed. These included links to retailer

groups, agri-tourism potential and areas of value-adding potential.

As a result of the first round of workshops, two objectives for the industry were identified: a collaborative grower group; and specific strategic marketing for subtropical bananas.

The second round of workshops then addressed these two objectives and delivered information to the subtropical banana industry on developing the capacity to move to the next stage with these objectives. This included using local/regional organisations such as Regional Development Australia for collaborative projects; as well as utilising regional identity, or provenance, for marketing leverage.

Project BA12000

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Fruit and nut tracking study

A study is recording changes to consumer attitudes and behaviour to bananas, apples, pears and avocados over time. It includes consumer attitudes, usage, purchase frequency and location and awareness of any primary or residual advertising in the market.

The research is carried out using a random online survey of Australian consumers aged 18+ in six waves per year.

Ninety percent of consumers claim to buy bananas at least monthly and 62 percent buy them on a weekly basis.

The proportion of people pre-planning their banana purchase has steadily increased over the last year, reaching 69 percent in the December to February wave.

Three quarters of those surveyed said they would include bananas in their top five preferred energy snacks and the vast majority (96 percent) agree that bananas are ideal for a healthy, filling snack on the go.

Around eight in ten consumers indicated satisfaction with the size of Cavendish bananas, the appearance and range of ripeness of bananas on offer.

Around one in three consumers recalled having seen an advert for bananas when prompted. The top message takeouts are that bananas give you long lasting energy (82 percent), and that bananas are a healthy alternative to other energy snacks (80 percent).

Project MT12048

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Marketing program 2013/14

Working around the clock to make Australian Bananas no. 1

Six months into its second year and two years since its launch, the Australian Bananas “long lasting energy snack” marketing campaign continues to make a big impression on consumers.

The overarching communication objective for the marketing strategy is to increase banana purchase and the number of occasions used amongst 18–39 year-olds whilst maintaining the purchasing levels of the traditional core audience, main grocery buyers with kids. This will be achieved by demonstrating the benefits of long-lasting energy to consumers. To build consideration for bananas as an everyday snack and increase frequency of purchase, the aim is to remind consumers of its benefits at key snacking moments throughout their day. The business objective is to make bananas the number one snack food in Australia by 2015.

The media channel mix remains consistent with the previous year – TV, digital/online, social, out-of-home and radio advertising. Channels have a dual role of brand education around long lasting energy and a time targeted approach to reach our target audience during key snacking occasions. In the first half, the aim was to deliver 27 million advertising impacts, but that target was exceeded by 26 percent, reaching 34 million.

The quality of the fruit has been tremendous and demand has remained strong, despite the abundance of supply in the market. The strong retail prices (highlighted by an average price of \$2.92 per kilogram over the last 12 months at Woolworths) have been very satisfying. 15 million cartons have already been shifted from July 2013 to January 2014. On current projections, this will significantly beat the industry forecasts of 24 million cartons over the full year by potentially six million cases.

Encouraging research

For the 12 months to January 2014, Nielsen research showed that the total sales volume of bananas increased 3.5 percent from 17.9 kilograms per household to 18.5kg. In the same period, the average sales value has risen 2.7 percent from \$56.60 to \$58.80. Consumers are also spending more on

average on each shopping trip – up from \$2.50 to \$2.60. Big numbers when you consider this is 10 cents for every banana shopping trip over the year, nationally. Much of this growth has been led by Woolworths and Coles.

The number of households purchasing bananas has declined slightly, driven by relatively high price and poor fruit quality in the first quarter. However, penetration recovered and is trending positively in the second half of the year, especially for the 18–39 year old target audience.

In other positive news, both primary and secondary audience targets are buying bananas more frequently compared to last year. Young Transitionals (no children, one person aged 35 years or under in the household) have grown from 14.9 times per year on average to 15.8 times, while Independent Singles (no children, one person aged 35 years or over) have grown from 19.9 times to 20.2 times. Both audiences are on target to deliver against the program’s robust KPIs.



The growth opportunity for bananas

Brand tracking consumer research is equally encouraging. Bananas continue to be Australia’s most preferred energy snack, with half of the research respondents ranking Bananas as their #1 preferred energy snack and 75 percent ranking them in their top five preferred energy snacks.

- 86 percent of people agree that bananas are a long-lasting energy source.
- 96 percent agree that bananas are ideal for a healthy, filling snack on the go.
- 88 percent agree bananas are a great source of long-lasting energy.
- 88 percent say they are likely to buy bananas in the next four weeks.



Radio & Take 40 Australia

Bananas have the highest proportion of planned purchases among all fruits purchased in Australian supermarkets, with 69 percent of people planning to buy bananas before visiting the shop. This figure has grown consistently from 57 percent in January 2013. This is a clear acknowledgement that the marketing strategy is effectively changing attitudes towards bananas and consequently influencing their shopping behaviour.

Long-lasting energy

The new campaign, which first launched in August 2012, continues the “Nature’s Energy Snack” theme but introduced a powerful new message identified in research – that bananas are a great source of long-lasting energy.

On TV and more

The 2013/14 marketing campaign, still built on the “longer lasting energy” platform, will continue to reinforce the position of bananas as Australia’s No. 1 snack. Spearheading the campaign is the TV commercial that is the sequel to the highly successful “No-No, Na-Na” ad that launched four years ago.

The TV commercial is being run throughout the year using an “always on” media strategy (the program runs continuously rather than in small bursts) on Channel 10 and 7. The introduction of Channel 7 aims to bring the campaign to a brand new audience that has previously not been exposed to the campaign. The free-to-air TV campaign is also being supported by subscription and digital TV advertising.

A major advertising burst was to be launched in August 2013 but was held back due to the federal election dominating the media. To avoid clutter, TV advertising was rescheduled and was replaced by the sales-driving medium of national radio. The year two campaign effectively launched nationally in October (post-election) and was boosted by



TVC NoNos vs. NaNas

an increase in marketing investment to drive retail sales during this period of increased production. These additional funds added a three-week burst of radio in October across stations including Nova, Fox, 2Day and the MCM network on *Take 40 Australia* and allowed an increased TV presence in February and March 2014, with an additional burst of TV in April. Additional funds also provided additional online video advertising from February to June 2014.

Reaching more people through facebook

Through social media, the program continues to engage more and more Australians through the creative development of fun and interesting content. The facebook strategy is founded on five key communication pillars: “No-nos”, visual recipes, pick-me-up (energy messaging), health and nutritional information and reactive content based on topical news stories. The social media approach is focused on the long lasting energy message through a series of videos featuring the popular brand ambassador, Billy Slater. The first half of the campaign created over 90,000 stories, reached 13.2 million people, delivered 23 million advertising Impressions, generated 249,000 engaged users whilst securing 30,000 new page likes. Nearly 205,000 people have ‘liked’ the page.



The Australian Bananas facebook page



Billy Slater & The Two Bananas

In March 2014, the “Get Fit with Billy Slater” campaign was launched. Two banana characters join Billy Slater in some very interesting fitness sessions with hilarious results. On Channel 9’s *The Footy Show*, Billy talked about his love of Australian Bananas and the national facebook promotion. The promotion is also supported by a national PR campaign.

Outdoor advertising billboards will continue to play an important role, with the “longer lasting energy” message appearing on bus and tram backs around the country, on digital screens within shopping centres as well as on office lobby screens promoting bananas to office workers at key snacking times.

The National Community, Schools and Sponsorship Program will engage 47 events this year with Australian Bananas partnering for the first time with Sanitarium for the Australian Weet-Bix Kids TRYathlon, a series of 12 events spread across the country aimed at keeping kids healthy and active.

These events continue to attract large crowds of banana lovers. Banana-branded merchandise including three t-shirt designs, rugby league balls, caps, flyers, temporary tattoos and school pencil case kits are provided at relevant events and activities. The sponsorship program is further supported through PR with health and energy messages from Billy Slater and Nutritionist Glenn Cardwell.

The goal of all this marketing activity is to push consumers into retailers to buy more bananas – which is where the National Retail Support Program links in.

Partnering with retail

The National Retail Support Program delivered the majority of its planned activity in the first half of the year driving sales and banana

consumption through POS, advertising, merchandising, catalogue and education (nutrition, health and long lasting energy messaging) through various exclusive retail campaigns with large and small retailers alike.

Australian Bananas were heavily promoted via a fully integrated eight-week campaign across 1,300 of the top IGA stores and with the top 300 green grocers across a four week period. This campaign included a first in Australia and horticulture – Australian Bananas partnering with Aldi to roll out a huge national point-of-sale (POS) program aligned with the national banana campaign. POS was erected in all 320 Aldi stores in November and December 2013, which saw sales volume increases across the store network during the period that defied their historical category trends.

Woolworths have confirmed a second national Australian Bananas campaign that will include TV, radio, an educational booklet, merchandising support, PR and POS for the second half of the financial year after a very strong performance in April 2013. Promising discussions are also underway with 7-Eleven, who are looking to champion bananas in the convenience store format.

It has been a very busy time for the Australian Bananas marketing team with a comprehensive ‘always on’ marketing program scheduled for the remainder of the year. Coming off the back of strong demand and healthy prices, it all points to a year of continued growth for Australian Bananas.

Project BA13500

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OBJECTIVE 2

Increase production efficiency by five per cent by 2014, with minimal to no environmental impact

Eradicating Bunchy Top

Banana Bunchy Top Virus (BBTV) has been contained to the south east corner of Qld and north of Lismore in NSW, for most of the 100 years since its introduction in planting material from Fiji in 1913. Now, with fewer plantations and increasing distance between them, the prospects for eradication have never been better.

The current eradication strategy is based on an inspection frequency devised by Dr John Thomas, a virologist with the University of Queensland in a previous project (BA08020). Trained BBTV detectors conduct inspections within the Bunchy Top infection zone at frequencies according to the incidence of the disease in a plantation. On a category basis, 'clean' A and B plantations are inspected at least annually and those in the high infection categories D and E up to 10 times a year. Infected plants are destroyed by injection with a herbicide and a systemic insecticide is injected to kill the sole vectors of the disease, banana aphids.

Good progress has continued in eradicating BBTV in commercial plantations in both NSW and South East Qld.

In NSW, since benchmark infection levels were established in April 2010, 75 percent of the 230 plantations are now 'clean', covering an area of 570 hectares – or 71 percent of the total plantation area of 799ha in the zone. Only 31 plantations (169ha) remain in the higher infection categories (D and E) with just 12 in category E.

Three 'hot spot' plantations that had contributed over 60 percent of the NSW state total infections are now responsible for just 22 percent following destruction of heavily infected sections of the plantations and more frequent inspections.

For the 45 commercial plantations remaining in South East Qld the project has been successful, with the number of plantations clean of Bunchy Top increasing from 28 to 34. There has been a decrease of those with more than 10 Bunchy Top infections in the past 12 months (Category E) from six to three.

In South East Qld there is heavier infection pressure from banana aphids dispersing from infected non-commercial feral and backyard plantings and contributing to this has been



Bunchy Top inspector Wayne Shoobridge prepares to destroy infected plants at an abandoned plantation in the Tweed Valley, Northern NSW

comparably less enforcement of regulatory controls on movement of planting material compared to NSW.

A detailed communications plan with industry and the general public, reviewed annually, has been a vital part of the activity in phase two of the project. Improving knowledge in the community, particularly in South East Qld, has been vital.

By the end of 2013/14, continued progress towards Bunchy Top-free status has been made in commercial plantations in both NSW and Qld, with another year remaining in phase two in which the project hopes to meet its aim.

To maintain commercial plantations BT-free, the industry faces a major challenge, that of eradicating the disease from Australia. Infected banana plants in South East Qld backyards and in multiple-occupancy rural properties in NSW are continually being found and destroyed.

Movement of planting material has occurred within and between properties in the BT zones and this requires more education and cooperation. It is the unrestricted movement of planting material that presents the greatest threat to the major production region in North Qld.

New technologies for detecting banana plants using high resolution aerial and satellite digital imagery are being evaluated, while personal data recording units linked to a custom built mapping database have proven to be highly effective in assisting the project's management strategy.

The latency question regarding the BT virus in the banana plant is now the major focus of research by Dr John Thomas and Dr Kathy Parmenter from the University of Queensland and the Department of Agriculture, Fisheries and Forestry Qld, as the industry and the project team evaluate the prospects of eventual eradication of this disease.

Apart from ensuring productivity from commercial plantations within the Bunchy Top zone, other recent research by Dr David Cook and a team at the Cooperative Research Centre for National Plant Biosecurity has estimated that the banana industry is saving between \$16–27 million in annual losses by preventing the spread of Bunchy Top to the major production area in northern Qld.

Project BA12006

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Sub-tropical banana quality and yield

Two cyclones have significantly affected output from the main production areas of north Queensland in the past decade, making the Australian banana industry recognise the importance of geographic diversity on production.

Two demonstration trials were undertaken in Carnarvon, WA – one trial evaluated the use of a fully-enclosed structure of protective netting to improve productivity and profitability and the other evaluated planting densities to identify optimal productivity and profitability.

Protective netting structures were found to improve banana productivity compared to open field production, but cultivation of bananas under protective netting was less profitable than open field production.



Dr Chris Schelfhout (right) at walk-over weighing system for collecting bunch weights for bananas grown

A planting arrangement of 3x3 meters and developing three pseudostems from a central corm was found to be the most profitable planting density over the period of the trial.

Project BA08003

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Yellow Sigatoka in FNQ

Yellow Sigatoka, also known as leaf spot, is a fungal leaf disease present in all banana growing regions in Australia, except Carnarvon in WA.

Severe cases of yellow Sigatoka affect bunch weight and fruit quality through uneven ripening. The disease is easily spread through the air, meaning poorly managed plantations are a source of disease for neighbouring plantations. The best means of control is through effective de-leafing, in conjunction with appropriately timed fungicide applications.

The warm, humid climate of north Queensland is particularly favourable for yellow Sigatoka and other leaf diseases. In north Queensland, yellow Sigatoka is a prescribed disease, meaning growers are required to keep leaf levels below five per cent by state government regulations.

Mr Louis Lardi, the yellow Sigatoka liaison officer, conducts leaf spot inspections and educates growers on disease symptoms. This helps growers comply with regulations on a voluntary basis. He also plays an important communications role, sharing information between growers, rural suppliers, government and university research staff. The project works with

Biosecurity Queensland to take action under the Plant Protection Regulation when a grower doesn't comply.

During 2013, only 15 cases out of 592 visits had to be referred to Biosecurity Queensland. This voluntary compliance rate of 97.5 percent demonstrates the success of the officer in helping growers gain a greater understanding of leaf spot disease. This also demonstrates the commitment of most growers to good disease management practices.

This year Mr Lardi, in conjunction with the authorities, designed a poster showing levels of leaf spot so banana farmers can train their staff to be aware of yellow Sigatoka.

Many leaf spot samples are being taken throughout the Northern Pest Quarantine zone and tested by the Department of Agriculture, Fisheries and Forestry Qld for testing of fungicide resistance. Mr Lardi also forwards samples of other suspect banana diseases.

Project BA12007

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Young tissue culture banana plantings within a fully enclosed net structure at the Gascoyne Research Station, Carnarvon

Banana Plant Protection Program

The banana plant protection program brings together and maintains the key core activities required for banana plant health in the short and long term, and streamlines the various aspects of plant protection research to ensure economical delivery of effective outcomes for the industry as a whole and on a national basis.

Four sub-programs represent four key strategic areas:

1. Resistant varieties and consumer choice
2. Safeguarding production and markets
3. Sustainable production systems
4. Building science and communication.

The program is run by a leadership team made up of Dr Andre Drenth, The University of Queensland (program leader), Mr David Peasley, Peasley Horticultural Services (Murwillumbah, NSW) and Mr Richard Piper, Scientific Advisory Services (Tully, QLD). The program also has a steering committee made up of three representative growers, a Portfolio Manager from Horticulture Australia Limited (HAL) and a Research and Development Manager from the Australian Banana Growers' Council. The long-term strategic focus is to underpin decision making in a scientific manner to allow more effective management

of biosecurity threats, search for resistant varieties to key diseases, address market diversification needs, address current plant protection needs and build long-term capacity in this area.

Resistant varieties and consumer choice

This sub-program is focused on the long-term integrity of the Australian banana industry through the testing of alternative varieties with resistance to Panama wilt and leaf diseases.

Close collaboration with international breeding and banana germplasm selection programs has been obtained and a new post-entry quarantine facility has been established in Brisbane to import new planting material of new varieties and testing it for the absence of pathogens prior to release into the field.

The first round of field testing a range of varieties took place in the subtropics in northern NSW and in Far North Qld. The second round of trials aimed at more large-scale testing of promising lines from the first trial has been planted. A screening site for testing varieties for resistance to Fusarium wilt Tropical Race 4 (TR4) was established in the Northern Territory.



International and local researchers inspecting race 1 field site

To inform industry of progress, eight articles were published in the *Australian Bananas Magazine* and *Australian Banana News*, seven talks were given and two field days, which were held at Duranbah and South Johnstone.

This work is testing if potential varieties have stable resistance to high-risk endemic and exotic pathogens as well as good agronomic and consumer characteristics. This outcome of this research is variety options for the long-term future of the banana industry and provides scope for diversifying product offering and expanding into new production areas.

Safeguarding production and markets

The focus of the second subprogram is on developing and coordinating core plant protection activities to ensure Australia can implement effective banana biosecurity strategies. This includes developing and applying diagnostics that enable improved testing of planting material, combined with tissue culture activities, to safeguard importing and distributing germplasms of new varieties in quarantine and the Quality Banana Approved Nursery (QBAN) scheme.

Ongoing improvements are being made in the diagnostic of black Sigatoka, banana freckle and Fusarium wilt to ensure tests are reliable. Over 300 germplasm accessions imported into Australia from various countries have been virus indexed. A low number of virus positives were found and this imported material was destroyed.



Banana plant protection program sub-program leader Mike Smith conducting banana variety evaluation

All 198 QBAN samples tested during the last six months were free of viruses.

Virologists are making good progress in efforts to rapidly kill banana plants using adjuvants in combination with herbicides to reduce the spread of Banana bunchy top virus (BBTV) by banana aphids. Production of antiserum for BBTV and Banana streak virus is in progress to supplement dwindling stocks. The use of monoclonal antibodies will allow the researchers to produce unlimited amounts of antisera, which will underpin further diagnostics of these viruses. The diagnostic team also developed a diagnostic assay for Banana wilt associated phytoplasma (BWAP) as this pathogen was recently found in Papua New Guinea (PNG). This diagnostic test is needed as part of the newly-developed import requirements for banana germplasm from PNG.

At present, the diagnostic team is underpinning the freckle eradication campaign in the Northern Territory. The experience and information gained during the PhD research of MeeHua Wong at the University of Queensland proved invaluable to this eradication campaign.

The research has made tissue-cultured plantlets of new and existing banana varieties available, providing the industry with a wider range of elite disease-free planting material. The program has expanded expertise in fast and efficient diagnosis of banana disease pathogens for effective surveillance, eradication and containment and has provided the foundation for market access negotiations. It has also provided an improved capacity for rapid and coordinated early response to current and emerging banana pathogens and incursions through the availability of a skilled team of diagnosticians and an efficient diagnostic toolkit.



Yellow Sigatoka leaf spot

Sustainable production systems

This sub-program focuses on cost-effective and sustainable management of endemic pests and diseases. Whilst Australia is currently free of several major banana pathogens, there are a number of pests and diseases present that need to be controlled effectively in order to maximise productivity and fruit quality.

The 2013 Strategic Agrochemical Review for the banana industry assessed existing agrochemicals saw the deregistration of old ones and identified new ones for future potential. Shifts in sensitivity towards propiconazole and trifloxystrobin used to control to yellow Sigatoka were identified in North Qld, resulting in a change in the use of fungicides. To address this issue, face-to-face surveys were conducted in North Qld and northern NSW, focusing on current disease management practices, with special emphasis on changes in the management of yellow Sigatoka. At the same time, field trials were conducted to look at alternatives to control yellow Sigatoka.

Results from the first year of a large field trial (0.7ha) at South Johnstone Research Station in Qld to compare the efficacy of chlorothalonil to other commonly used products for the control of yellow Sigatoka were obtained and the first year of the chlorothalonil vs. Biopest oil® trial was completed. Due to the overall low disease pressure this summer, the trial is being repeated during the 2014 season.

Two other field trials will evaluate the efficacy of a number of 'soft' chemicals on two commercial growers' properties in North Qld.

The benefits of this research include effective control of endemic pests and diseases of bananas in Australia, phasing out of old chemistries, researching the effectiveness of alternative products and moving towards new, targeted, softer pesticide options that fit with cultural practices, beneficial organisms and minimised likelihood of resistance issues developing in addition to environmental issues.

Building science and communication

This sub-program focuses on training, extension, national and international linkages and communication. It is aimed at strengthening the skills base at all levels in research and industry, and especially to foster improved communication between research and industry.

Improved international collaboration and links with Embrapa (the Brazilian Enterprise for Agricultural Research), Bioversity International and Plant Research International (Wageningen University, Netherlands) were established. From the start, 11 students have been supported financially through scholarships and/or operating support. Two students partly supported by the program have been awarded their PhD, and a third one submitted her thesis while two students obtained first class honours in banana pathology-related research projects. International student exchange started with a PhD student from Wageningen, who is working on a global population study of Panama TR4, visiting Brisbane for seven weeks to work with program scientists to complement her international Fusarium collection prior to analysis. The rigorous science of the program has produced 11 published scientific papers and another four are in the process of being published.

Communication to growers and other stakeholders was done through regular articles in every issue of the *Australian Bananas Magazine* and *Australian Banana News*, talks at several field days at Duranbah and South Johnstone to communicate research activities and new varieties to growers. Significant recognition of Australia's role in banana research is evidenced by Dr John Thomas holding the position of Chair of the Bioversity International Musanet Conservation Thematic Group and Mr Jeff Daniells appointed as chair of the ProMusa Crop Production working group. Planning of the mid-term review of the Banana Plant Protection Program is well underway.

This sub-program provides a strong and motivated research base that is abreast of the latest plant protection developments in the world and has the capacity and capability to address short and long-term industry issues in an effective manner. At the same time, it is important that the researchers, growers and other stakeholders communicate effectively.

Project BA10020

For more information contact:

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Competitive production systems for sustainability

Since mid-2011, efficacy and residue data for ethephon pseudostem injection for “nurse-suckering” is being generated to support an application for a minor use permit to the Australian Pesticides and Veterinary Medicines Authority (APVMA).

The current methods used involve physically damaging or removing the banana plant’s apical meristem, which is physically demanding, labour-intensive and often inconsistent in killing the apical meristem.

Preliminary assessments indicate that chemical “nurse-suckering” requires only one-third of the labour inputs compared to traditional methods. The resultant plant growth is improved and the failure rate resulting in re-growth/survival of the parent stem is much lower than traditional methods. The potential replacement of this task by ethephon pseudostem injection offers improved success rates and significant labour savings for the industry, potentially making crop scheduling and uniformity management easier to achieve in practice.

A minor use permit application was lodged with the APVMA.



Vigorous sucker growth can be achieved with less labour using the chemical “nurse-suckering” technique

Project BA09038

For more information contact:

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Best Management Practices guideline

Banana Best Management Practices (BMP) Environmental Guidelines was created for banana growers in partnership with the Department of Agriculture, Fisheries and Forestry Qld (DAFF Qld) and the Australian Banana Growers’ Council (ABGC). The BMP was developed with grower representation sought from all major production regions throughout Australia to ensure that it is truly a national framework.

The document’s structure aligns with Freshcare’s Environmental Guidelines and provides flexibility for the user, so that it can be used as a standalone internal audit tool or to support a third party audited system such as Freshcare.

Since its completion, over 20 percent of the national banana production area

has commenced using the resource. The roll-out of the Guide is supported by the *National banana development and extension project* (BA13004).

The user-friendly BMP is available to growers in hardcopy or online on the ABGC’s website, www.abgc.org.au.



Project BA11006

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Managing Q-fly with SPLAT CueLure

SPLAT CL is a form of male annihilation technique (MAT) that is successfully used for fruit fly management in some countries and is significantly easier to apply than most MAT systems.

This project is assessing the efficacy of SPLAT in combination with CueLure (CL) for controlling Queensland fruit fly (Q-fly) in susceptible crops.

In the contact and feeding bioassay, all Q-flies exposed to SPLAT-5% CL + Spinosad weathered lures for two weeks were killed within two hours. These lures were effective at reduced kill rates for up to eight weeks. In the outdoor cage study, this lure/toxicant performed as well as, or better than the MAT cups over eight weeks. These results suggest that SPLAT-5% CL + Spinosad may be an excellent replacement for MAT cups.

On completion, the expected outcomes of the project include:

1. Sufficient data to develop an integrated Q-fly management program
2. The availability of an easily applied MAT technology will lead to a reduction in fruit fly populations
3. Reduced reliance on older insecticides
4. Reduced residue risks
5. Reduced disruption of beneficial insects and reduced secondary pest outbreaks
6. Improved market access for national and international trade through a SPLAT CL-based program to support Areas of Low Pest Prevalence (ALPP), Pest Free Places of Production (PFPP)
7. Further funding will be sought to extend the success of SPLAT to date by incorporating female attractants.

Project MT12001

For more information contact:

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OBJECTIVE 3

Ensure positive return on investment of levies by enhancing industry's leadership, capacity and influence

Industry communications

An extensive three-year integrated program of banana industry communications was delivered by the Australian Banana Growers' Council (ABGC) from October 2010 to December 2013. In that time, the program established systems, materials and activities required for effective communications that will continue to be used in future activities to engage industry.

At the time the project began, a number of tools and tactics were found to be insufficient for effective and timely communications that best supported the industry's objectives, as set out in the *Strategic Investment Plan*. Additional communications tools were needed for the primary audience of banana growers, including both tropical and subtropical growers, and for industry stakeholders who work with growers in areas such as research, extension and supply chain.

It is important to communicate information about the industry and its activities to selected external audiences, so the development of a communications strategy, including annual operating plans, was essential to ensure an integrated approach that would deliver communications in a timely and effective fashion.

The project aimed to focus on key audiences using influential communication channels and to build the industry's communications capacity. The strategy was to develop an appropriately resourced communications infrastructure to effectively communicate compelling information that meets and exceeds grower expectations, as well as the expectations of other internal and external audiences. This would help build a clear profile for the industry on national issues that impact the industry.

The key outputs of the new program included:

- A new communications system and infrastructure, including a database of growers, researchers, service providers and supply chain partners
- Image and information resources
- Identifying and training industry spokespeople to comment on industry issues
- A new communications team
- Annual operating plans and a system for project review and evaluation
- A suite of publications and communications materials distributed at scheduled intervals including the

'Australian Bananas' magazine, newsletters and e-bulletins

- A new ABGC website with frequently updated sections for notices, media releases, industry information, online publications and information videos
- The use of communications materials to share information from industry programs and projects, such as hosting material generated by other projects on the website.

The new program established connections among banana industry stakeholders, providing a common understanding of banana industry issues, as well as enhanced the banana industry's reputation as an industry that is capable of assessing and managing important issues and communicating these issues to its audiences.

Project BA09066

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Nuffield Australia Farming Scholarships

Nuffield Australia awards scholarships annually to those in the agricultural and horticultural industries in Australia. The 16-week program provides an opportunity for scholars to travel overseas on a research scholarship relating to primary production, with the objective to increase production knowledge, personal and management skills. These scholarships are a unique opportunity for a primary producer to stand back from day-to-day business management and study a relevant subject of interest.

Paul Inderbitzin, who is researching banana fruit quality and waste management, received the 2013 Nuffield Scholarship supported by Horticulture Australia Limited using the banana levy and matched funds from the Australian Government.

Paul is employed in the family farming enterprise as manager of 220 hectares of irrigated cropping/seed production and 40 hectares of bananas. He has invested heavily in the banana industry in the past 24 months – an area of expansion Paul sees great potential in. Yet, ongoing consumer demand for consistent production of high-quality fruit is an area which Paul sees as a real challenge. He has also studied disease and quarantine challenges for the banana industry.

In the past 12 months, Paul attended the Contemporary Scholars Conference (CSC) in Canada in March 2013, and also participated in the March-April 2013 Global Focus Program. The group travelled to New Zealand, Canada, Mexico, Brazil, the United Kingdom, and California and Washington DC in the United States.



Since his return from the Global Focus Program, Paul has also completed his individual study, visiting Ecuador, Columbia, Costa Rica and the Philippines. He will present his report 2014 at the Nuffield Australia National Conference in Tasmania, which is being held from Wednesday 17 to Saturday 20 September 2014.

More information about Paul can be found at: nuffield.com.au/paul-inderbitzin/

Project BA11003

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Banana enterprise performance comparison

The Banana Enterprise Performance Comparison Project, also known as the Banana Benchmarking Program, is currently in the fourth round of data collection. By June 2014, four years of financial and operational data from a representative sample of banana growers across all regions was collected and analysed. Growers that participated in each round of the project received personalised comparative analysis reports at the completion of each round.

Personalised grower reports enable participants to see how their business compares to other similar businesses in their region and nationally. Key areas of information include their production per hectare, costs and returns per carton equivalent sold and their labour use per carton sold and per hectare harvested, compared to others. Detailed comparisons are also provided on specific cost areas so each participating grower can see how much they spend on key areas such as packaging, chemicals and fertilisers, freight, picking labour and packing labour, compared to other similar growers.

Participating growers have used the information provided from the program in numerous ways to assist them to improve their business.

With the information from the last round of data collection, one grower identified two key areas: yield and picking and packing labour costs, where their business was not performing compared to others around them. Resulting from that, the grower changed their nutritional program substantially and reviewed and changed staffing in both picking and packing areas. Other growers have provided their personal comparative analysis reports to their banks or finance providers and these have assisted them in planning future finance requirements. In two separate examples, groups of growers have agreed to share the information gained from the program and begun to work collectively to identify how to improve their individual businesses.

At the industry level, high level aggregated data from the program has been a key source of information for further research and analysis in the industry. At the completion of the first three rounds of data collection, the program had collected detailed production and financial information for over 8,000 hectares of production and 17.5 million, 13 kilogram cartons of production (over three years). The average yield per hectare across the benchmarking group has been 2,100 cartons per producing hectare

(27 tonnes per hectare) and the average operating costs per carton of bananas sold for the benchmarking group was \$22 per carton. Thirty two percent of the participating businesses had made an annual operating loss and twenty five percent had achieved an average operating return or greater.

At the completion of the current round of data collection, a detailed industry report will be completed that will outline the major findings and issues identified in the program.

The report will provide valuable aggregated, multi-year data about production, operations and key financial performance issues identified over a four-year period in the Australian banana industry.

Project BA11026

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Industry extension and R&D management

The role of the R&D Manager is to develop and implement priority R&D projects in line with the *Banana Strategic Investment Plan 2012–14* (SIP) and as recommended by the Banana Industry Advisory Committee (IAC). Other functions include providing technical support to industry, project reporting, extension and building relationships to ensure the best return on investment to banana levy payers.

In the last year the R&D Manager, Dr Jay Anderson, has assisted with developing projects in priority areas of the environment (Reef Rescue and Action on the Ground) and disease management (Panama Tropical Race 4 and chemical minor use projects). She has also participated in developing the banana industry's new SIP.

The technical support to industry has included responses to reviews of chemicals (e.g. Nemacur) and pest and disease management (biosecurity regulations, changes to the Emergency Plant Pest Response Deed and the Torres Strait Fruit Fly review). Dr Anderson has also been working with researchers to investigate a new clean planting material scheme, which will also require input from growers and nurseries. The incursion of the exotic disease banana freckle on 'Cavendish' bananas in the Northern Territory has demanded significant attention from Dr Anderson on behalf of the banana industry.

The study tour to China and the Philippines (BA12703) was the big extension and relationship building activity of the last year. Other activities included attendance

at local grower meetings and reports in the e-Bulletin, newsletter and *Australian Bananas* magazine.

Dr Anderson also acts as a link between the IAC and service providers, providing the IAC with updates on the progress of projects and technical input on projects when required.

Project BA11027

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Banana Industry Strategic Investment Plan

The *Australian Banana Strategic Investment Plan 2014–19* provides a clear direction for defining key outcomes needed from investment over the next five years to ensure that bananas are first choice for Australian consumers and remain number one in the fresh produce category.

At current levy rates, it is expected that in excess of \$30 million will be invested by Horticulture Australia Limited into industry research, development and extension (RD&E) and marketing over the next five years. The new plan demonstrates to levy payers that their money is being and will be invested in the most effective way to achieve sustainability, profitability and growth for the sector. Likewise, the

Australian Government can be assured that industry is addressing its Rural R&D Priorities. Importantly, the plan can also help guide investment from other stakeholders and RD&E funded outside of the industry levy.

In developing the plan, a series of regional consultation meetings were held with growers, researchers and other stakeholders to understand the issues impacting the industry.

The plan recognises the need for the Australian banana industry to be a sustainable sector supported by profitable production and supply chain businesses that consistently deliver a valued and

quality product to the consumer. By doing so, bananas maintain their lead position in the fresh produce category.

The plan focuses on three key priority areas:

1. Sustainable supply and improved productivity
2. Increasing demand for Australian bananas
3. Industry development: providing the capacity and planning to support research and its adoption.

Project BA12017

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Attracting and retaining young professionals in horticulture

A well-documented shortfall of skilled professional personnel exists to meet future needs in horticulture. The Primary Industry Centre for Science Education's (PICSE) experiential program re-directs bright young people towards a range of research, advisory and managerial horticultural industry and science-based careers. It directly connects Year 10–12 students and teachers with professional personnel working in innovative careers in the primary industries sector through its network of Activity Centres (ACs), staffed by professional Science Education Officers (SEOs).

The banana and almond industries support the program in southern Queensland and South Australia and feature in PICSE Science Class Engagement, Science Investigation Awards; industry placements and camps; teacher professional development/resources development; and industry internships.

At the 2013 Banana Industry Congress, a YouTube clip by PICSE student, Chanara Gettons as a follow-up to her profile reported in the Autumn 2013 edition of *Hortlink* was presented. The *Hortlink* issue can be found at www.horticulture.com.au. Another was the research update presentation by Dr Jay Anderson at the October SEO professional

development forum and attendance by PICSE students at the Ecosciences Precinct in Brisbane.

The program continues during 2014 with an option to expand during 2015 with potential engagement of other horticultural industries.

Project MT11006

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Study tours to China and the Philippines

In July 2013, eight banana growers, two banana nurserymen and the ABGC R&D Manager participated in a study tour to China and the Philippines to learn first-hand about banana growing practices in those countries.

Highlights from the tour included seeing the use of organic fertilisers and automated fertigation systems in China and the whole-of-chain focus on quality in the Philippines. All participants returned to Australia with a greater appreciation for the Australian industry's good disease status.

On their return, the study tour participants attended local banana growers' association meetings and shared their experiences with other growers. The R&D Manager presented at meetings with researchers, agrichemical resellers and pest consultants.

Another study tour is planned for Central America in July 2014, where participants will look at the systems used there to ensure quality for their markets.



In-field packing in China

Project BA12703

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National banana development and extension

To ensure a positive return on the investment of industry levies, the Australian banana industry identified the need to improve the adoption rate of R&D outcomes.

To address the gap between R&D project outcomes and the adoption of these practices, the project has been tasked with delivering the outcomes of current and recently completed industry and across industry projects, ensuring banana growers and other industry members are exposed to the outcomes of projects funded out of banana levies.

There are various impediments to adoption and, where possible, these aspects have been addressed by:

- Establishing a reference group to prioritise projects and issues. This group has grower representation from each of the major production regions, as well as a supply chain member

- Ensuring research outcomes are adapted to be commercially relevant and regionally specific where possible
- Delivery of information through a number of mediums to increase exposure.

While banana growers as levy payers are the target audience, other sectors of the supply chain will also be engaged including consultants, suppliers, wholesalers and retailers.

Immediate priorities for the project are planning for the biennial road shows to be held in each of the major production regions and filming of YouTube style videos linked to the Australian Banana Growers' Council's website.

The 2014 road shows will run throughout July and August and visit six production regions. Road show locations are:

- Murwillumbah, NSW, Tuesday 15 July

- Coffs Harbour, NSW, Thursday 17 July
- Carnarvon, WA, Wednesday 23 July
- Tully, QLD, Thursday 31 July
- Innisfail, QLD, Friday 1 August
- Mareeba, QLD, Thursday 7 August

Project BA13004

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National Banana Development
and Extension Program

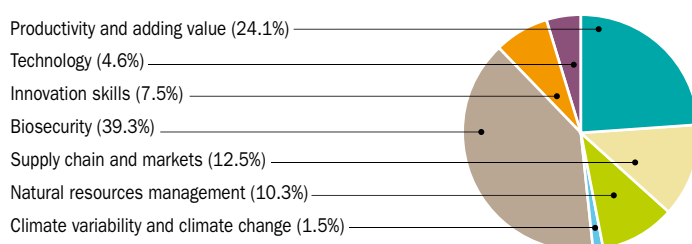
Australian Government priorities

As part of the Australian Government's commitment to rural research and development (R&D), horticulture industries can access matching Commonwealth funding through Horticulture Australia Limited (HAL) for all R&D activities.

The Australian Government's Rural R&D Priorities aim to foster innovation and guide R&D effort in the face of continuing economic, environmental and social change. HAL's

operations are closely aligned with these priorities.

This chart shows the percentage of expenditure in HAL's banana R&D program against each of the Australian Government priorities for rural R&D. Full details of expenditure across all industries is available in HAL's annual report at www.horticulture.com.au.



Productivity and adding value

Improve the productivity and profitability of existing industries and support the development of viable new industries.

Supply chain and markets

Better understand and respond to domestic and international markets and consumer requirements and improve the flow of such information through the whole supply chain, including to consumers.

Natural resource management

Support effective management of Australia's natural resources to ensure primary industries are both economically and environmentally sustainable.

Climate variability and climate change

Build resilience to climate variability and adapt to and investigate the effects of climate change.

Biosecurity

Protect Australia's community, primary industries and environment from biosecurity threats.

Innovation skills

Improve the skills to undertake research and apply its findings.

Technology

Promote the development of new and existing technologies.

HAL's consultation funding

The consultation agreement between Australian Banana Growers' Council (ABGC) and HAL sets out the tasks each organisation will perform to enable the other to discharge its responsibilities related to levy payers and industry services.

Consultation agreement activities are funded by HAL using the Banana R&D levy and matched funds from the Australian Government.

These funds enable ABGC to undertake the Annual Levy Payers' Meeting, conduct IAC meetings, attend HAL Industry Forums, HAL/ABGC Executive Board to Board consultation meetings, and other formal and informal consultation between personnel of ABGC and HAL.

The full year consultation funding expenditure for ABGC in 2013/14 was \$291,563. This represents 4.18 percent of the total annual levy expenditure. Consultation funding in respect of R&D represents \$142,866 of the investment in R&D expenditure and consultation funding in respect of marketing represents \$148,697 of the investment in marketing expenditure.

Project BA13910

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HAL's roles and relationships

Horticulture Australia Limited (HAL) is a not-for-profit industry owned company. Its role is to manage the expenditure of funds collected by the Australian Government on behalf of horticulture industries. In 2013/14 HAL invested more than \$100 million in projects to benefit horticulture industries.

An Industry Advisory Committee (IAC) is established for each industry with a statutory levy and annual income exceeding \$150,000.

The Prescribed Industry Body (PIB) for an industry is responsible for recommending to HAL the establishment of, and any changes to, statutory levies. The PIB for an industry with a statutory levy recommends membership of the IAC to HAL and must demonstrate how the skills required on an IAC are met by the persons they recommend for appointment to the committee.

For more information please visit www.horticulture.com.au.








ACROSS INDUSTRY PROGRAM

The banana industry contributes funding towards an across industry program that addresses issues affecting all of horticulture. Details of the current program are listed below. A full report of the program can be found at www.horticulture.com.au/industries/across_industry_program.asp.

Project no.	Rural R&D priorities	Project title	Levy or VC	Project start	Project finish	Life of project value	2013/14 expenditure	Organisation	Contact
Objective 1: To enhance the efficiency, transparency, responsiveness and integrity of the supply chain									
AH12009		Partnering fresh produce with retail – Quality Assurance harmonisation	Levy	1/8/12	31/8/13	\$143,500	\$212	Kitchener Partners	Tristan Kitchener 0407 827 738
AH12010		Partnering fresh produce with retail – Joint working groups	Levy	1/8/12	30/11/14	\$305,000	\$43,446	Kitchener Partners	Tristan Kitchener 0407 827 738
AH12015		Food Innovation Hub	Levy	9/5/13	31/8/13	\$28,166	\$5,633	Food Innovation Partners	Russel Rankin 07 3289 4591
AH12016		Partnering fresh produce with retail: Quality Assurance harmonisation	Levy	15/5/13	30/6/15	\$337,307	\$105,096	Kitchener Partners	Tristan Kitchener 0407 827 738
AH13026		Retailer in-store training	Levy	16/12/13	30/5/14	\$20,000	\$20,000	Kitchener Partners	Tristan Kitchener 0407 827 738
Objective 2: Maximise the health benefits of horticultural products in the eyes of consumers, influencers and government									
<i>No active project in 2013/14 to report on</i>									
Objective 3: Position horticulture to compete in a globalised environment									
AH09027		Investing in Youth successful scholarship applicant	Levy	31/5/10	31/3/15	\$80,000	\$10,000	Rural Industries R&D Corporation	Margo Andrae 02 6271 4132
AH11009		Autonomous perception systems for horticulture tree crops	Levy	1/5/12	27/11/15	\$120,000	\$40,000	The University of Sydney	Dr Salah Sukkarieh 02 9351 8154
AH12018		Export symposium 2013	Levy	12/4/13	31/12/13	\$34,188	\$22,931	Oliver & Doam	Agnes Barnard 02 8011 4743
AH12019		Horticulture Leaders – Across Horticulture Leadership Training – 2013 and 2014 programs	Levy	3/6/13	31/5/15	\$184,323	\$50,000	Strategic Business Development Pty Ltd	Russell Cummings 0414 929 585
AH13018		Horticulture R&D showcase	Levy	1/8/13	30/6/14	\$46,889	\$35,680	Horticulture Australia Limited	Brenda Kranz 02 8295 2317
AH13020		Horticulture information unit	Levy	1/8/13	28/2/16	\$250,000	\$31,000	Horticulture Australia Limited	Pat Abraham 0438 474 758
AH13028		Australia Fresh – across industry initiative	Levy	16/12/13	30/12/14	\$50,000	\$44,789	Oliver & Doam	Agnes Barnard 02 8011 4743
MT12029		Horticultural Market Access Manager 2012-2015	VC/ Levy	1/10/12	30/9/15	\$613,500	\$74,839	Langley Consulting	Chris Langley 0498 723 103
Objective 4: Achieve long term viability and sustainability for Australian horticulture									
AH09003		Plant protection: Regulatory support and coordination	Levy	1/7/09	30/5/14	\$995,061	\$243,225	AKC Consulting Pty Ltd	Kevin Bodnaruk 02 9499 3833
AH09014		Across industry climate research, development and extension (RD&E) activities	Levy	13/4/10	28/2/14	\$60,264	\$12,000	Horticulture Australia Limited	Brenda Kranz 02 8295 2317
AH10003		Horticulture component of the National Climate Change Research Strategy for Primary Industries	Levy	30/11/11	1/7/15	\$157,500	\$0	Horticulture Australia Limited	Brenda Kranz 02 8295 2317
AH10006		Pesticide spray drift in horticulture – a response to new guidelines from the APVMA	Levy	1/7/10	30/6/14	\$20,000	\$4,676	Horticulture Australia Limited	Jodie Pedrana 0404 314 751
AH11007		Developing an LCI database for Australian agriculture	Levy	2/1/12	1/10/13	\$20,000	\$10,000	Rural Industries R&D Corporation	Brenda Kranz 02 8295 2317
AH11029		Provision of independent technical and secretarial services to the National Working Party for Pesticide Application	Levy	20/12/11	31/5/15	\$100,000	\$25,000	Plant Health Australia	Nicholas Woods 02 6215 7704
AH11010		Biotechnology awareness in horticulture	Levy	10/10/11	30/6/14	\$102,177	\$9,941	Horticulture Australia Limited	Alok Kumar 0418 322 070
AH11011		Horticulture funding of the CRC for Plant Biosecurity	Levy	30/6/12	30/5/18	\$3,000,000	\$500,000	CRC For National Plant Biosecurity	John Austen 02 6201 2882
AH13014		Horticulture for Tomorrow review and upgrade	Levy	5/8/13	23/6/14	\$43,228	\$43,196	Horticulture Australia Limited	Brenda Kranz 02 8295 2317



























Project no.	Rural R&D priorities	Project title	Levy or VC	Project start	Project finish	Life of project value	2013/14 expenditure	Organisation	Contact
AH13023	💡	Industry Development Forum with International Horticulture Congress	Levy	17/2/14	30/6/15	\$45,100	\$2,923	Horticulture Australia Limited	David Low 0429 221 443
AH13025	📊	Research to support HAL Member input to the HAL review	Levy	18/11/13	28/2/14	\$43,399	\$43,647	Horticulture Australia Limited	John Madden 0421 274 076
AH13027	📊 🔗 🌿	Plant protection: Regulatory support and coordination – continuation of AH09003	Levy	31/5/14	1/7/18	\$892,748	\$25,000	AKC Consulting Pty Ltd	Kevin Bodnaruk 02 9499 3833
AH13032	📊	Response to Agricultural Competitiveness white paper	Levy	1/4/14	30/4/14	\$31,500	\$31,500	KPMG	Michelle Pawley 02 6248 1141
MT10029	📊 🔗	Managing pesticide access in horticulture (cont from AH04009 and MT07029)	Levy	1/7/10	2/7/15	\$1,261,460	\$67,398	Horticulture Australia Limited	Jodie Pedrana 0404 314
MT10049	📊 🌿 🖥️	A multi target approach to fruitspotting bug management	Levy	1/3/11	1/4/16	\$1,353,016	\$40,741	Department of Primary Industries NSW	Ruth Huwer 02 6626 1196
MT10066	📊 🌿 🖥️	Project coordination for MT10049	Levy	14/3/11	31/5/14	\$42,984	\$1,214	RCR Agri Pty Ltd	Chaseley Ross 0409 707 806
Objective 5: Other									
AH11003	📊 🔗 🌿 ⚡ 🔒 💡 🖥️	Support Function for AIC	Levy	15/9/11	30/8/13	\$84,187	\$35,000	Horticulture Australia Limited	Warwick Scherf 02 8295 2323
AH11017	💡	Sponsorship of Appetite for Excellence Awards	Levy	1/7/11	22/6/14	\$70,500	\$20,000	Horticulture Australia Limited	Melissa Smith 02 8295 2340
AH11023	💡	Graham Gregory Award and function	Levy	1/7/11	30/6/16	\$151,500	\$30,000	Horticulture Australia Limited	Sharyn Casey 02 8295 2379
AH11026	📊 🔗 🌿 ⚡ 🔒 💡 🖥️	Across Industry program administration	Levy	1/7/11	30/6/14	\$31,800	\$6,332	Horticulture Australia Limited	Warwick Scherf 02 8295 2323
AH13800	📊 🔗 🌿 ⚡ 🔒 💡 🖥️	Across Industry Annual Report 2012/13	Levy	1/7/13	30/6/14	\$15,000	\$9,688	Horticulture Australia Limited	Barbara Knezevic-Marinos 02 8295 2318
MT12028	📊	OHMA operational support 2012–2015	VC/Levy	1/10/12	31/5/15	\$91,500	\$19,832	Horticulture Australia Limited	Peter Whittle 0409 578 937
Horticulture Australia Transformational Fund projects									
AI12002	📊 💡 🖥️	Transformational solutions to challenges and issues facing the Australian horticulture industry	Levy	9/9/13	1/10/14	\$500,000	\$250,000	Intellectual Ventures	Paul Levins 0419 239 180
AI13001	🔗 🔒	Dietary sterilisation of male Queensland Fruit Fly	Levy	1/5/14	28/2/18	\$1,253,316	\$0	CSIRO Biosecurity Flagship	Dr Christopher Hardy 02 6246 4375
AI13004	📊	Transforming subtropical/tropical tree crop productivity	Levy	5/11/13	31/5/17	\$3,089,012	\$652,026	The Department of Agriculture, Fisheries and Forestry, Qld	Dr John Wilkie 0402 390 885
AI13008	💡 🖥️	A platform for the continuous genetic improvement of accepted cultivars of vegetatively propagated horticultural crops	Levy	14/11/13	31/1/17	\$2,025,439	\$354,981	Queensland University of Technology	Dr James Dale 07 3138 2819
AI13011	📊 💡	Transformational Innovation Performance Analysis	Levy	1/10/13	31/12/14	\$147,385	\$117,308	The University of Queensland	A/Prof Damian Hine 07 3346 8162
AI13012	📊 🔗 💡	A value chain approach to horticultural product innovation	Levy	20/12/13	31/12/14	\$265,430	\$112,544	Central Queensland University (CQU)	Philip Brown 07 4150 7145
AI13013	📊 💡 🖥️	Direction setting Forum for a horticultural education strategy	Levy	24/2/14	30/7/15	\$15,000	\$7,967	Horticulture Australia Limited	Sharyn Casey 02 8295 2379
AI13014	📊 🔗 🌿 ⚡ 🔒 💡 🖥️	Advancing Post Doctorates in horticulture	Levy	1/6/14	30/4/18	\$800,000	\$0	Horticulture Australia Limited	Sharyn Casey 02 8295 2379

Australian Government Rural R&D Priorities:

 Productivity and adding value
  Supply chain and markets
  Natural resource management
 Climate change and climate variability
  Biosecurity
  Innovation skills
  Technology * Unknown

BANANA PROGRAM

Project	Industry obj.	Rural R&D priorities	Project title	VC/ Levy	Project start	Project finish	Life of project value	2013/14 expenditure	Organisation	Contact
BA08003	1		Growing subtropical bananas for quality and yield	VC/ Levy	1/9/08	19/12/13	\$166,000	\$43,200	Department of Agriculture and Food WA	Valerie Shrubbs 08 9956 3322
BA09038	1		Building competitive banana production systems for a sustainable future	Levy	1/12/10	30/9/14	\$399,432	\$0	The Department of Agriculture, Fisheries and Forestry, Qld	Stewart Lindsay 07 4064 1120
BA09066	3		Banana industry communications program	Levy	19/10/10	31/1/14	\$1,291,680	\$0	Australian Banana Growers' Council Inc	Jim Pekin 07 3278 4786
BA10020	1		Banana Plant Protection Program	Levy	19/9/11	31/5/16	\$6,410,034	\$1,947,409	The University of Queensland	A/Prof Andre Drenth 07 3255 4391
BA11003	3		Banana industry support for Nuffield Australia Farming Scholarship	Levy	1/8/11	30/9/14	\$49,000	\$0	Nuffield Australia Farming Scholars	James Geltch 0412 696 076
BA11006	1		Developing a Best Management Practices guideline for the Australian banana industry	Levy	1/9/11	28/9/13	\$61,026	\$12,705	The Department of Agriculture, Fisheries and Forestry, Qld	Naomi King 07 4064 1152
BA11026	3		Banana Enterprise Performance Comparison: Phase 3	Levy	28/6/12	4/7/14	\$250,000	\$162,500	CDI Pinnacle Management Pty Ltd	Howard Hall 07 3217 6466
BA11027	3		Banana industry extension and R&D management	Levy	28/6/12	20/7/15	\$428,897	\$133,003	Australian Banana Growers' Council Inc	Jim Pekin 07 3278 4786
BA12000	1		Subtropical banana industry market development implementation for 2012/13	VC	23/1/13	22/7/13	\$46,507	\$9,651	Geraldine Bernadette O'Flynn	Geraldine O'Flynn 0402 308 970
BA12006	1		Banana Bunchy Top Virus: Phase 2	Levy	17/9/12	1/8/15	\$1,995,616	\$537,496	Australian Banana Growers' Council Inc	Jim Pekin 07 3278 4786
BA12007	1		Integrated management of yellow Sigatoka and other banana diseases in Far North Qld	Levy	17/9/12	30/7/15	\$432,702	\$117,811	Australian Banana Growers' Council Inc	Jim Pekin 07 3278 4786
BA12010	3		Costs associated with BA12016: Banana production and marketing information system - costs	Levy	15/5/13	23/5/14	\$3,000	\$225	Australian Banana Growers' Council Inc	Ravi Hegde 02 8295 2338
BA12013	3		Banana IAC marketing expert	Levy	14/11/12	30/9/14	\$25,500	\$9,988	Fresh Partners Pty Ltd	Mike Evans 0419 843 253
BA12015	1		Minor use permits for the banana industry	Levy	31/3/13	30/6/14	\$4,080	\$700	Horticulture Australia Limited	Jodie Pedrana 0404 314 751
BA13017	1		Generation of residue data for a minor-use permit application in banana plantations	Levy	13/12/13	30/4/15	\$52,105	\$31,263	Eurofins Agrisearch	Sara Pengelly 0427645355
BA12016	3		Banana production and marketing information system	Levy	1/10/13	28/2/14	\$124,000	\$124,000	Naturelab	Don Chambers 0402 395 970
BA12017	3		Banana Industry Strategic Investment Plan	Levy	27/6/13	28/4/14	\$95,100	\$95,100	Plant and Food Research Australia Pty Ltd	Jenny Margetts 0418 215 276
BA12701	3		10th Banana Industry Congress, Coolumb, June 2013	VC/ Levy	18/9/12	31/8/13	\$160,000	\$32,000	Australian Banana Growers' Council Inc	Jim Pekin 07 3278 4786
BA12703	3		Capacity building in bananas	VC/ Levy	21/6/13	1/11/14	\$163,380	\$59,980	Australian Banana Growers' Council Inc	Jay Anderson 07 3278 4786

Project	Industry obj.	Rural R&D priorities	Project title	VC/ Levy	Project start	Project finish	Life of project value	2013/14 expenditure	Organisation	Contact
BA13002	1		Scoping herbicide impacts on banana production and soil health	Levy	17/3/14	18/9/16	\$104,651	\$46,860	The Department of Agriculture, Fisheries and Forestry, Qld	Tony Pattison 07 4064 1127
BA13003	3		Communications project for the banana industry	Levy	3/3/14	31/1/17	\$1,094,943	\$166,153	Australian Banana Growers' Council Inc	Rhyll Cronin 07 3278 4786
BA13004	3	 	National banana development and extension project	Levy	16/9/13	30/9/16	\$568,282	\$173,058	The Department of Agriculture, Fisheries and Forestry, Qld	Naomi King 07 4064 1152 0413 902 216
BA13005	1	 	Development of best practice protocols for collection, processing and storage of banana for supply to food industry	-	6/9/13	21/6/14	\$109,827	\$109,827	The Department of Agriculture, Fisheries and Forestry, Qld	Kent Fanning 07 3276 6011
BA13015	2	   	Carton Scoping Study	Levy	1/10/13	30/7/14	\$54,538	\$54,538	Kitchener Partners	Tristan Kitchener 0407 827 738
BA13019	1		Project extension: Carton management in the banana industry	Levy	7/4/14	6/4/15	\$80,000	\$32,000	Kitchener Partners	Tristan Kitchener 0407 827 738
BA13023	3		Banana strategic industry development	Levy	1/5/14	20/7/17	\$462,359	\$61,415	Australian Banana Growers' Council Inc	Jim Pekin 07 3278 4786
BA13024	1		Review of Project BA12006: Banana Bunchy Top Virus – Phase 2	Levy	3/6/14	1/8/14	\$20,000	\$6,000	To be Advised	To be Advised
BA13025	3		NSW Banana Industry Development Officer	Levy	10/6/14	7/7/17	\$199,089	\$25,691	Department of Primary Industries NSW	Myles Parker 02 6391 3155
BA13501	1		TV-FTA & STV	Levy	1/7/13	30/6/14	\$1,400,000	\$1,412,613	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13502	1		Online (Pre-roll/CU TV)	Levy	1/7/13	30/6/14	\$100,000	\$101,190	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13503	1		Online (Time targeted display)	Levy	1/7/13	30/6/14	\$450,000	\$448,766	Horticulture Australia Limited	Gustavo Soares 02 8295 2324
BA13504	1		Social media	Levy	1/7/13	30/6/14	\$260,000	\$261,061	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13505	1		Outdoor – Bus backs	Levy	1/7/13	30/6/14	\$300,000	\$306,858	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13506	1		Outdoor – Lifts	Levy	1/7/13	30/6/14	\$100,000	\$120,037	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13507	1		Outdoor – Shopalities	Levy	1/7/13	30/6/14	\$200,000	\$196,097	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13508	1		Advertising creative	Levy	1/7/13	30/6/14	\$25,000	\$28,696	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13509	1		Radio	Levy	1/7/13	30/6/14	\$245,000	\$243,500	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13510	1		Retail support	Levy	1/7/13	30/6/14	\$110,000	\$64,732	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13511	1		Schools program	Levy	1/7/13	30/6/14	\$35,000	\$27,728	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13512	1		Billy Slater activation	Levy	1/7/13	30/6/14	\$65,000	\$66,405	Horticulture Australia Limited	David Weisz 02 8295 2320

Project	Industry obj.	Rural R&D priorities	Project title	VC/ Levy	Project start	Project finish	Life of project value	2013/14 expenditure	Organisation	Contact
BA13513	1		Public Relations	Levy	1/7/13	30/6/14	\$30,000	\$30,384	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13514	1		Industry & communications events	Levy	1/7/13	30/6/14	\$35,000	\$29,084	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13515	1		Sponsorship events	Levy	1/7/13	30/6/14	\$40,000	\$39,037	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13516	1		Nutrition	Levy	1/7/13	30/6/14	\$20,000	\$16,500	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13517	1		Merchandise	Levy	1/7/13	30/6/14	\$45,000	\$45,693	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13518	1		Industry communications	Levy	1/7/13	30/6/14	\$15,000	\$20,251	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13519	1		Contingency	Levy	1/7/13	30/6/14	\$100,000	\$1,500	Horticulture Australia Limited	David Weisz 02 8295 2320
BA13701	3		Postharvest study tour – Fruit ripening workshop 2014	VC	10/3/14	2/5/14	\$30,208	\$30,208	MacKay's Banana Marketing Co	Richard Clayton 02 8876 9500
BA13800	3		Banana Industry Annual Report 2012/13	Levy	1/7/13	30/6/14	\$6,346	\$6,790	Horticulture Australia Limited	Barbara Knezevic-Marinos 02 8295 2318
BA13910	3		Banana Consultation Funding Agreement 2013/14	Levy	30/8/13	10/8/14	\$291,563	\$291,563	Australian Banana Growers' Council Inc	Jane Wightman 0404 309 877
MT11006	3		Attracting and retaining young professionals in horticulture	VC/ Levy	1/12/11	30/11/14	\$409,656	\$20,000	Primary Industry Centre for Science Education	Gordon Stone 0408 063 229
MT12001	1		SPLAT Cue-lure based management of Queensland fruit fly	Levy	1/5/13	29/2/16	\$443,140	\$29,923	South Australian Research and Development Institute	Peter Crisp 08 8303 9539
MT12010	2		Understanding the purchase behaviour of fresh produce consumers	VC/ Levy	1/7/12	30/6/14	\$1,023,359	\$100,205	Horticulture Australia Limited	David Weisz 02 8295 2320
MT12048	2		Fruit and nut tracking study	Levy	27/5/13	30/12/13	\$37,520	\$9,196	Edentify	Dan Banyard 02 9698 5686

Australian Government Rural R&D Priorities:

- Productivity and adding value
 Supply chain and markets
 Natural resource management
 Climate change and climate variability
 Biosecurity
 Innovation skills
 Technology

CLIMATE CHANGE RD&E

Throughout 2013/14, the Australian horticulture industry invested in a range of research, development and extension (RD&E) projects to better understand, adapt to and mitigate the impacts of climate change.

Horticulture Australia Limited (HAL) has invested in cross-collaborative programs, such as the Climate Change Research Strategy for Primary Industries (CCRSPI) and Agricultural Lifecycle Inventory (AusAgLCI), and projects within or across industries, such as on crop phenology, nitrogen and plant-waste management, regulated deficit irrigation, carbon and soil, urban forestry and environmental auditing.

HAL's RD&E investment is obtained through industry levies, voluntary contributions and matched funds by the Australian Government.

BANANA LEVY INVESTMENT SUMMARY

Year ended 30 June 2014	Marketing 2013/14 \$	R&D 2013/14 \$	Combined 2013/14 \$
Funds available 1 July 2013	1,290,713	1,804,127	3,094,840
Income			
Levies received	4,282,827	2,010,160	6,292,987
Commonwealth contributions		2,317,353	2,317,353
Other income	65,779	65,124	130,903
Total income	4,348,606	4,392,637	8,741,243
<i>Budget</i>	3,816,097	4,161,200	7,977,297
<i>Variance to budget</i>	532,509	231,437	763,946
Program investment			
Levy programs	3,615,171	4,113,188	7,728,359
Service delivery programs by HAL	442,259	521,518	963,777
Across Industry contribution		86,249	86,249
Levy collection costs	25,719	25,471	51,190
Total investment	4,083,149	4,746,426	8,829,575
<i>Budget</i>	4,235,812	4,850,008	9,085,820
<i>Variance to budget</i>	152,663	103,582	256,245
Annual surplus/deficit	265,457	-353,789	(88,332)
Closing balance 30 June 2014	1,556,170	1,450,338	3,006,508

Banana Industry Advisory Committee (IAC)

Sue White (Chair)
Gary Fattore
Paul Inderbitzin
Cameron MacKay
Doug Phillips
Stephen Spear
Tim Ryan (Independent Officer)
Jay Anderson (Ex-Officio)
Jim Pekin (Ex-Officio)
Jane Wightman (Ex-Officio)



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